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NIKE-HERCULES HIGH ALTITUDE  
SURFACE-TO-AIR MISSILE  
UNITED STATES

GUIDELINE HIGH ALTITUDE  
SURFACE-TO-AIR MISSILE  
USSR

1. WEAPON CATEGORY:

US ARMY SURFACE-TO-AIR MISSILE.

SURFACE-TO-AIR --SA-2.

2. PRODUCTION:

SARATOV PLANT 292. THIS PLANT HAS BEEN IDENTIFIED AS THE PRODUCTION FACILITY FOR THE SA-2 GUIDELINE MISSILE BASED ON THE IDENTIFICATION OF SA-2 MISSILE CANISTERS ON TALENT PHOTOGRAPHY.

3. RESEARCH & DEVELOPMENT:

THERE IS EVIDENCE THAT THE SA-1 (GUILD) AND SA-2 MISSILES WERE DEVELOPED BY THE DESIGN BUREAU OF S.A. LOVACHKIN AT AIRCRAFT PLANT 301, MOSCOW/CHERKIZOVO. THE SIMILARITY OF DESIGN BETWEEN THE SA-1, SA-2, SA-3, AND GRIFFON MISSILES INDICATE THAT THIS DESIGN BUREAU IS PROBABLY RESPONSIBLE FOR THESE AND POSSIBLY OTHER AIR DEFENSE MISSILE SYSTEMS. FLIGHT TESTING AND PROGRAM EVALUATION IS CARRIED OUT AT THE S-300 LAUNCH

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COMPLEX, KAPUSTIN YAR MISSILE TEST  
CENTER.

4. TROOP TRAINING:

ALTHOUGH THERE ARE NUMEROUS SA-2 SAM  
TRAINING SITES THROUGHOUT THE SOVIET  
UNION, THE LARGEST TRAINING FACILITY IS  
LOCATED AT THE KORDON SAM TRAINING FAC-  
ILITY.

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5. DEPLOYMENT:

IOC - 1958.

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THE SA-2 SYSTEM HAS BEEN DEPLOYED TO  
ALL PARTS OF THE SOVIET UNION. IT IS  
PRESENTLY DEPLOYED IN POINT AND ZONAL  
DEFENSE SYSTEMS AT OR NEAR STRATEGIC  
INDUSTRIAL AND MILITARY INSTALLATIONS  
AND DEFENSE POPULATION CENTERS, (I.E.  
4 SAM SITES AROUND KHARKOV) AS WELL AS  
WITH TACTICAL MILITARY UNITS IN THE  
FIELD, AND IN PERIPHERAL DEFENSE SYS-  
TEMS ALONG THE BORDERS AND COASTS OF  
THE COUNTRY. IT CONSTITUTES THE MAJOR  
AIR DEFENSE MISSILE SYSTEM OF THE EAST  
EUROPEAN SATELLITES AND OF COMMUNIST

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CHINA, NORTH KOREA, NORTH VIETNAM,  
INDIA, CUBA, EGYPT, YUGOSLAVIA, AND  
INDONESIA.

6. MISSILE DESCRIPTION:

THE GUIDELINE IS A TWO-STAGE COMMAND-  
GUIDED MISSILE. IT UTILIZES A SOLID  
PROPULSION BOOSTER STAGE AND A LIQUID  
PROPULSION SUSTAINER STAGE. THERE ARE  
AT LEAST THREE MODELS OF THE GUIDELINE  
(DESIGNATED MARK I, II, AND III). THEY  
HAVE MINOR EXTERNAL VARIATIONS. TECH-  
NOLOGICAL IMPROVEMENTS AND CHANGES IN  
THE FORWARD CANARDS AND REAR FINS AP-  
PEAR TO HAVE BEEN INCORPORATED IN EACH  
SUCCESSIVE MODEL IN ORDER TO IMPROVE  
THE AERODYNAMIC CAPABILITIES OF THE  
MISSILE.

	<u>SUSTAINER</u>	<u>BOOSTER</u>
LENGTH .....		
DIAMETER ....		
RANGE .....	17 NAUTICAL MILES	
ALTITUDE ....	85,000 FT (APPROXIMATELY)	
VELOCITY ....	MACH 3.5	
WARHEAD .....	HE 418 LB	

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Page 167. SITE DESCRIPTION:

THE SA-2 SITES AS DEPLOYED ARE FAIRLY STANDARD IN APPEARANCE, ALTHOUGH MINOR VARIATIONS HAVE BEEN OBSERVED. EACH SITE CONSISTS OF SIX LAUNCH POSITIONS WHICH SURROUND A CENTRAL CONTROL COMPLEX THAT CONTAINS THE FAN SONG TRACKING AND GUIDANCE RADAR AND THE OPERATION AND POWER VEHICLES. ALSO LOCATED AT THE SITE ARE THE SPOON REST A ACQUISITION RADAR AND THE SCORE BOARD IFF IDENTIFICATION EQUIPMENT.

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8. ORGANIZATION:

THE SA-2 SYSTEM IS ORGANIZED AND DE-  
PLOYED IN BATTALION SIZE UNITS, ONE  
BATTALION PER SITE IN CONTRAST TO ONE  
BATTERY PER NIKE SITE. WITHIN THIS  
STRUCTURE ARE A HEADQUARTERS, A FIRING  
BATTERY, AND A RADAR AND TECHNICAL COM-  
PANY WITH A TOTAL PERSONEL COMPLEMENT  
OF APPROXIMATELY 130.

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9. ELECTRONICS:

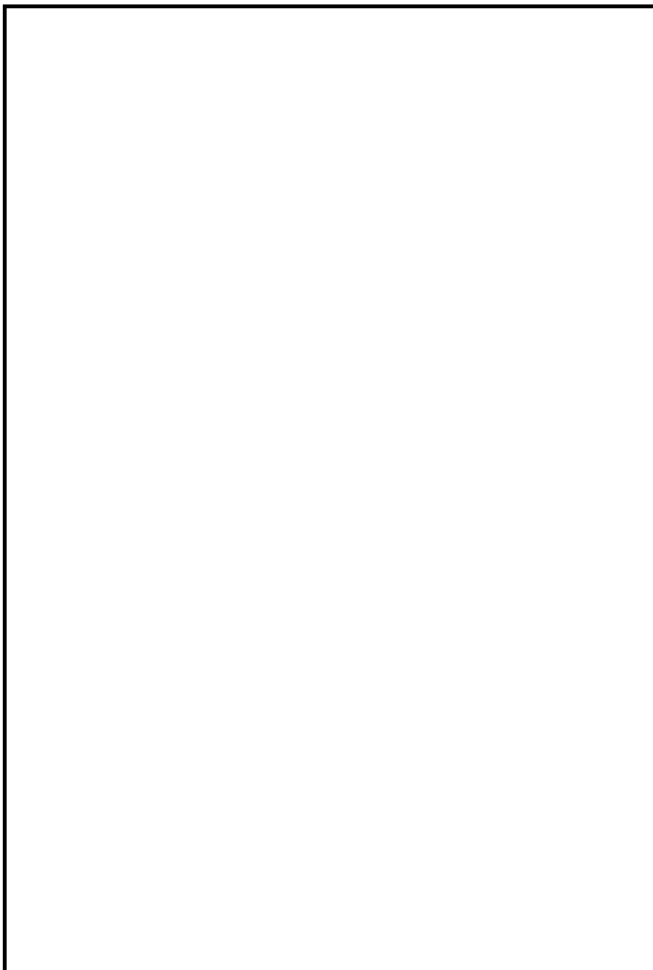


FAN SONG RADAR-TARGET TRACKING AND  
MISSILE GUIDANCE.

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SPOON REST A - ACQUISITION.

10. OPERATION:



THE OPERATION OF THE SOVIET SA-2  
SYSTEM IS BASICALLY SIMILAR TO THAT  
OF THE

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11. CAPABILITY:

- A) FAN SONG RADAR CAN TRACK ONE TARGET BUT IT CAN DELIVER THREE MISSILES AT THIS TARGET TO GIVE A GREATER KILL ASSURANCE.
- B) FAN SONG RADAR OF THE SOVIET SYSTEM PERFORMS THE SAME FUNCTION AS THE TARGET-TRACKING RADAR, THE TARGET-RANGING RADAR, AND THE MISSILE-TRACKING RADAR.

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OF THE [ ] SYSTEM.

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C) THE FAN SONG RADAR IS SMALLER

THAN ITS COUNTERPART IN THE [ ]

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SYSTEM.

D) CANNOT BE USED IN A SURFACE-TO-SURFACE ROLE.

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